Cooperative Institute for Research in the Atmosphere
Colorado State Univ

class.ncdc
USER and PRODUCER

G.G. Campbell
August 2005

- User:
  - ISCCP
  - GOES R assessment
  - Water vapor climatology stewardship
- Products:
  - AMSU analysis
  - ISCCP

- CIRA collects GOES, AVHRR, METEOSAT and GMS satellites for our internal research.
- For the International Satellite Cloud Climatology Project we sample and average the full disk data and forward that for further analysis and archival.
  - From class. we have downloaded a few full disk GOES data sets to **replace data missed** at CIRA due to reception problems. (G.G. Campbell)
- There are other daily users like ISCCP at CIRA
  - It is unlikely that we could replace our data collection with downloads of all GOES data from class
  - Class. provides a very useful backup to our data collection

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GOES R Risk Reduction

- One component of CIRA is the Regional and Mesoscale Meteorology Branch of NOAA.
  - Data for case studies has been downloaded including a variety of different satellite data for a limited time period: Quintessential class. user.
    - (Don Hillger)
- RAMM also accesses real time data feeds from NOAA servers in the weather service.

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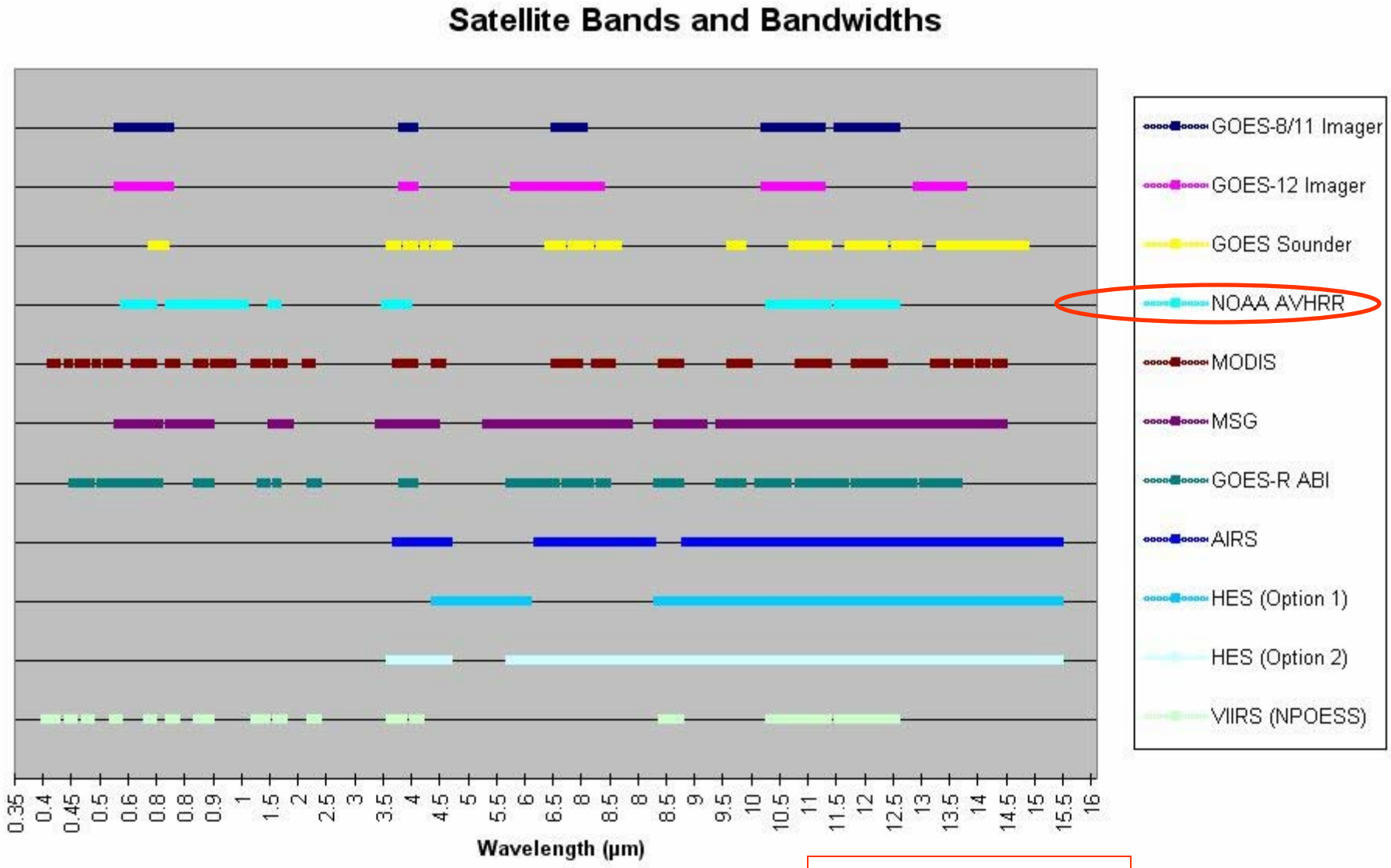
Satellite Bands and Bandwidths
GOES-8/11 Imager
GOES-12 Imager
GOES Sounder
NOAA AVHRR
MODIS
MSG
GOES-R ABI
AIRS
HES (Option 1)
HES (Option 2)
VIIRS (NPOESS)
0.35 0.4 0.45 0.5 0.6 0.8 0.8 0.9 1 1.5 2 2.5 3 3.5 4 4.5 5 5.5 6 6.5 8 8.5 8 8.5 9 9.5 10 10.5 11 11.5 12 12.5 13 13.5 14 14.5 15 15.5 16
Wavelength (µm)

From Class

Water vapor climatology

- CIRA has been involved with the NASA water VAPor project: 1989 to 2000.
- As part of data stewardship of that data set, tests are being made to extend the data to present.
- Several months of SSMI data has been downloaded from class (J. Forsythe and R. Kessler)
  - This climatology project points out a problem with class:
  - It is not very convenient to get blocks of data:
    - all SSMI for 3 months

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AMSU product

- As a cooperation with NESDIS, CIRA ingests AMSU data and produces blended total perceptible water product which is shipped back to NOAA near real time.
  - (S. Kidder and A. Jones CIRA, R. Ferraro, NOAA)
- This could be forwarded to class for archival and later distribution.
- It would make a fine case study resource

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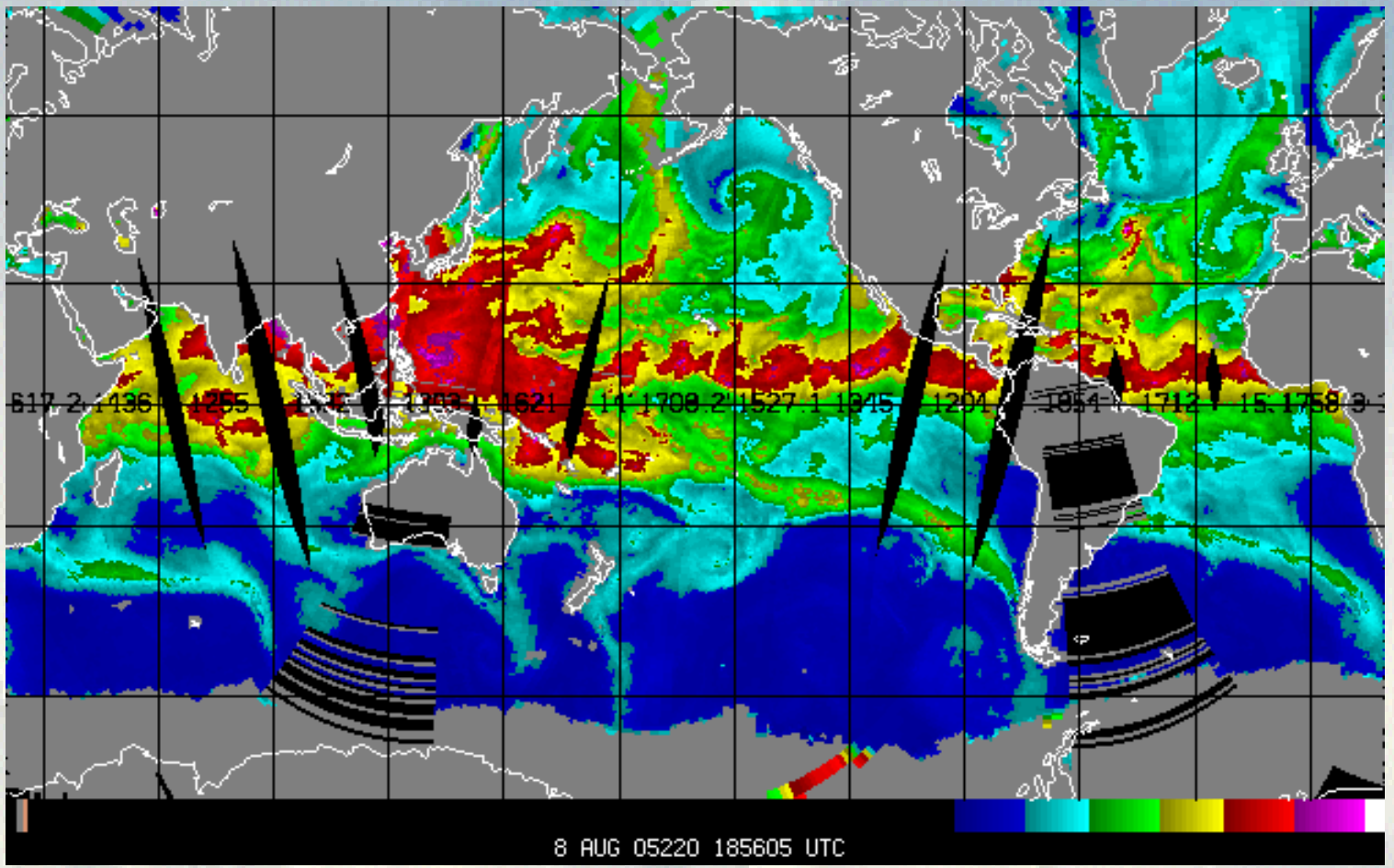

AMSU merge product from CIRA: TPW

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ISCCP B1 Product

- CIRA samples and averages the GOES data into full disk 8 km data sets for the ISCCP Archive Center (NCDC).
- This product dates back to **1983** and resides in the NCDC archive.
- It will be included in class. along with similar products from Meteosat and GMS.

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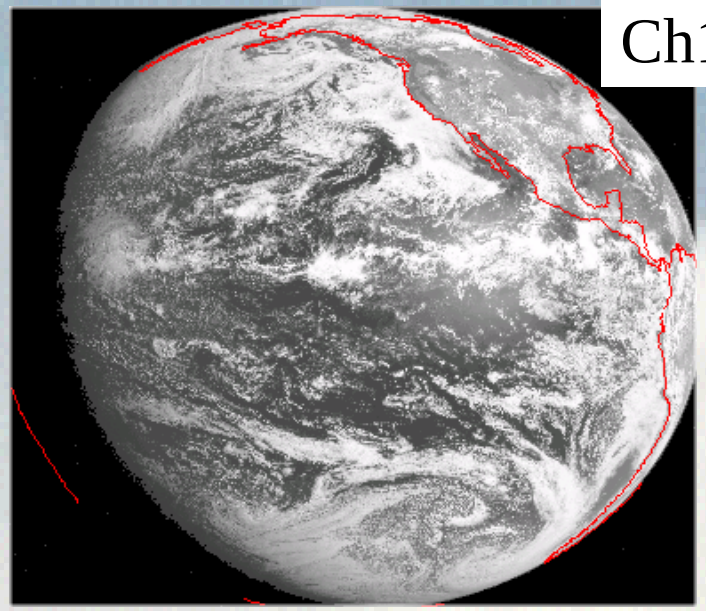
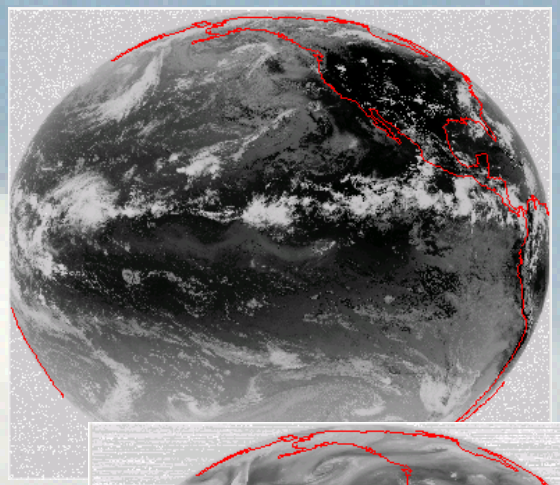
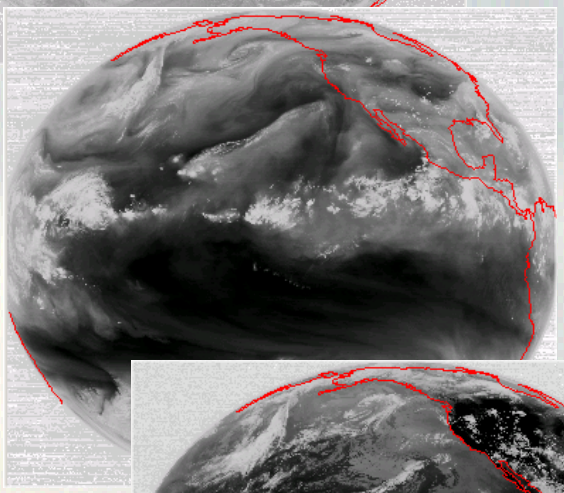


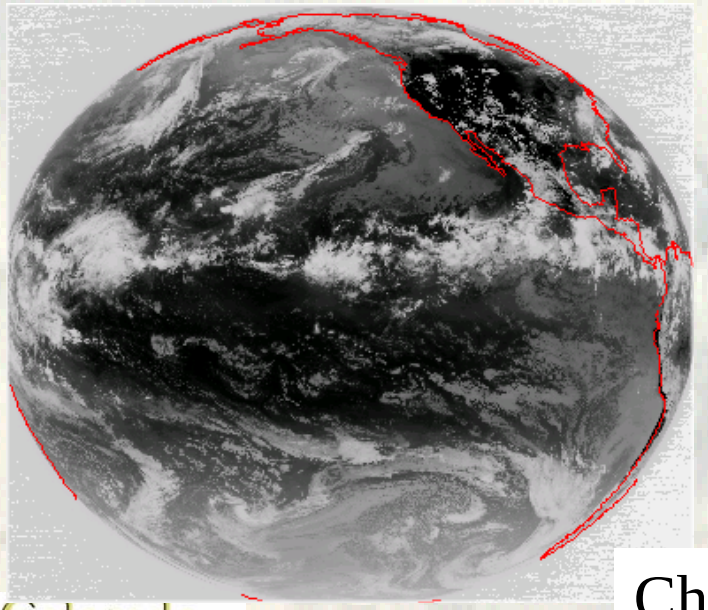
Ch1



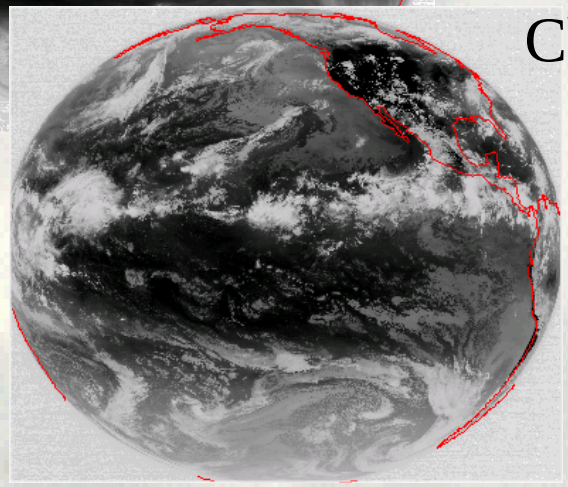
Ch2



Ch3



Ch4



Ch5

ISCCP B1

1983-now

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Our user experience

- Positive
- Modest improvements
  - Interface is tedious for many requests
  - Documentation needs to be improved
- Data set list not informative
  - I knew what I wanted before I entered class.
  - Graphical summaries of data sets

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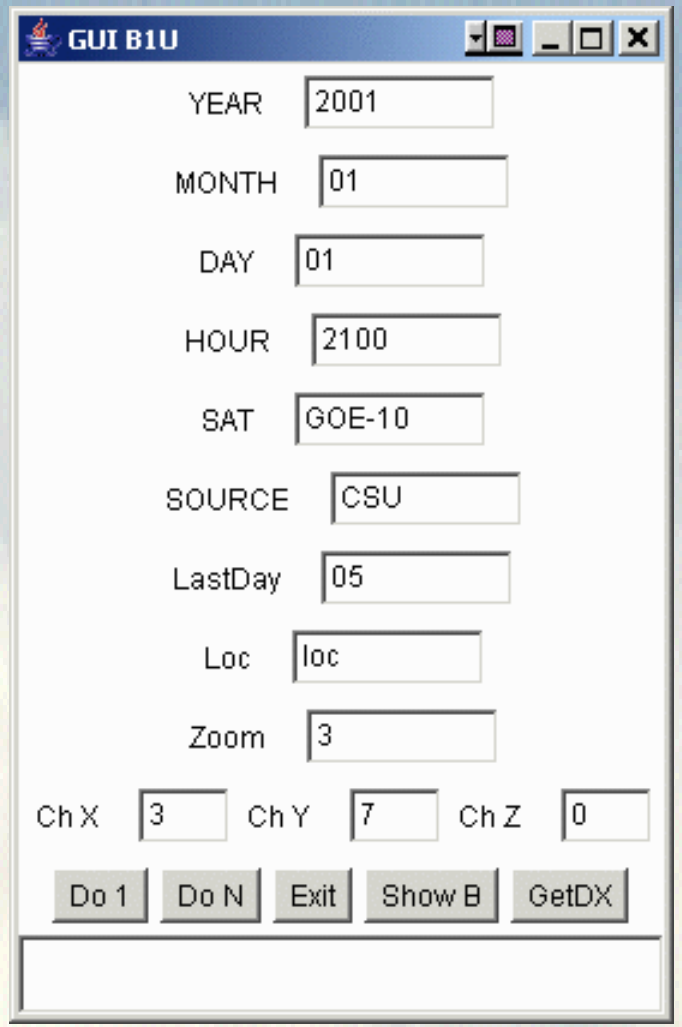
Interactive example: ISCCP DX

1 terrabyte on line
800,000 files:
7/1983 > 12/2003

($4000)



http://isccp.cira.colostate.edu/b1u/b1urun2.html

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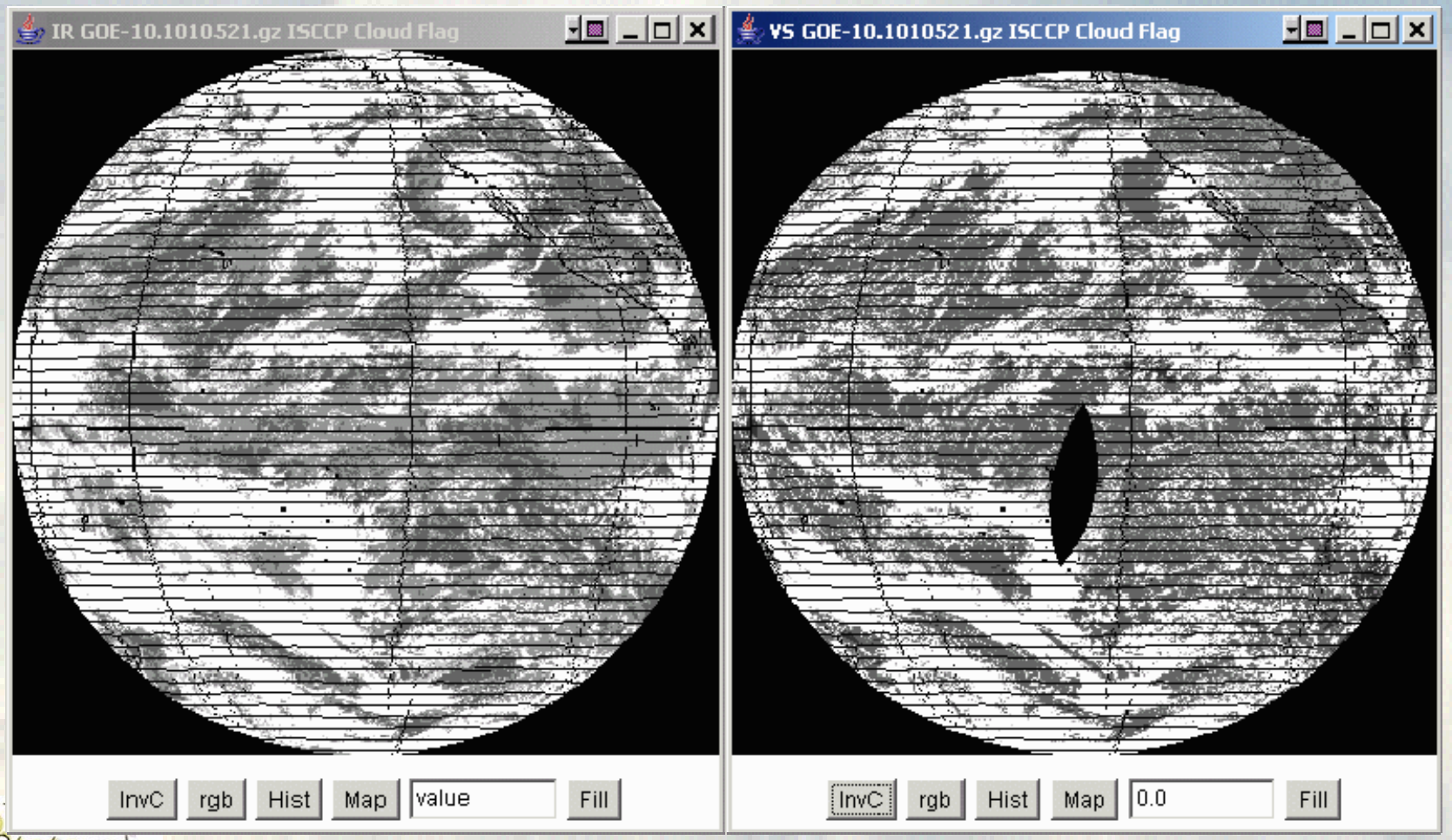
Cloud flags from ISCCP DX:



Long term goal: more challenging

- Direct access to data sets
  - Staging is not conducive to an interactive experience
  - Gathering a time series is difficult
  - Program access or ordering system is difficult
  - **Built in data quality indicator**
  - **Notify user of replacements of climate data records**
- Server sectorizing or sampling
  - With a smart server, much less data would be transmitted: trade off between
    - **CPU vs Network**

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